

REMARKS

In the forgoing claim amendments, claims 1-3 and 6-9 are amended. Claims 10-19 are withdrawn from further consideration. Now pending in the applications are claims 1-9, of which claim 1 is independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Claim Amendments

Applicants amend claims 1-3 and 6-9 to further clarify the scope of the claimed invention. In particular, claim 1 is amended to recite that the picture frame-shaped member is made of an elastic material and the picture frame-shaped member is disposed on both sides of said separator. Support for the claim amendments can be found in Figs. 2-10 and the corresponding description in the Specification. No new matter is introduced.

Claim Objections

Claim 1 is objected to because of minor informalities. In response to the objections, Applicants amend claim 1 to recite “an outer edge of the separators,” as suggested by the Examiner in the Office Action. In light of the claim amendments, Applicants respectfully request that the Examiner reconsider and withdraw the objection to the claim.

Claim Rejections under 35 U.S.C. §112

Claims 2, 8 and 9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In response to the rejections, Applicants amend claims 2 and 9 to change “picture frame-shaped members” to --picture frame-shaped member--. Applicants also amend claim 8 to overcome the antecedent basis rejection. Applicants further amend claim 9 to properly depend on independent claim 1 and selected intervening claims. In light of the claim amendments, Applicants request the Examiner to reconsider and withdraw the rejections of claims 2, 8 and 9 under 35 U.S.C. §112, second paragraph.

Claim Rejections under 35 U.S.C. §102Rejections of Claims 1-5

Claims 1-5 are rejected under 35 U.S.C. §102(b) as being anticipated by WO 97/24778 (“Clark”). Applicants respectfully traverse this rejection for the following reasons.

Claim 1 recites a fuel cell including a pair of separators and a nonconductive picture frame-shaped member coupled to the separators. The member allows an increase and a decrease of a space between the separators during movement thereof and the space is sealed at the outer edge of the separators irrespective of whether the separators move or not. *The picture frame-shaped member is made of an elastic material and the picture frame-shaped member is disposed on both sides of said separator.*

Clark discloses a method for fabricating electromechanical cells.

Applicants respectfully submit that the cited prior art reference fails to disclose each and every element of claim 1. Claim 1 is amended to recite that *the picture frame-shaped member is attached to the outer edge of a separator and is disposed on both sides thereof*. Applicants submit that Clark fails to disclose a picture frame-shaped member being disposed on both sides of a separator, as recited in claim 1. Clark discloses a method of fabrication of industrial electrolytic or galvanic cells which comprise a plurality of components joined together in a stack. The fuel cells disclosed in Clark do not have separators. The problem of accommodating increase and decrease of a space between separators does not arise in Clark. Therefore, Clark does not need to disclose the patentable feature of claim 1 that a picture frame-shaped member is disposed on both side of a separator.

In light of the aforementioned claim amendments and arguments, Applicants submit that Clark fails to disclose each and every element of claim 1. Applicants therefore request that the Examiner reconsider and withdraw the rejections of claims 1-5 under 35 U.S.C. §102(b), and pass the claims to allowance.

Rejections of Claims 1, 4 and 6-9

Claims 1, 4 and 6-9 are rejected under 35 U.S.C. §102(b) as being anticipated by WO 99/04446 (“Barton”). Applicants respectfully traverse this rejection for the following reasons.

Barton discloses a resilient seal for a membrane electrode assembly (MEA) in an electromechanical fuel cell.

Applicants respectfully submit that the cited prior art reference fails to disclose each and every element of claim 1. Claim 1 is amended to recite that *the picture frame-shaped member is attached to the outer edge of a separator and is disposed on both sides thereof*. Applicants submit that Barton fails to disclose a picture frame-shaped member being disposed on both sides of a separator, as recited in claim 1. Barton discloses a membrane electrode assembly (100) for an electrochemical fuel cell and a resilient fluid impermeable internal seal (110) comprising a sealant material impregnated into the porous electrode layers in sealing regions. One of ordinary skill in the art would readily understand that the separators (220) in Barton are made from carbon, and therefore that the fuel cells having a structure as described in Barton will not suffer from an increase or a decrease in the space between the separators (200). Therefore, Barton does not need to accommodate such change. Moreover, the seal of Barton is attached to the membrane electrode assembly and not a separator. The feature of a picture frame-shaped member being disposed on both sides of a separator is not disclosed in Barton.

Applicants therefore submit that the subject matter of amended claim 1 is not anticipated by the cited prior art, and request the Examiner withdraw the rejections of claims 1, 4 and 6-9 under 35 U.S.C. §102(b) and pass the claims to allowance.

Rejections of Claims 1 and 4

Claims 1 and 4 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,424,144 (“Woods”). Applicants respectfully traverse this rejection for the following reasons.

Woods discloses a one-piece separator plate suitable for use in a fuel cell stack.

Applicants respectfully submit that the cited prior art reference fails to disclose each and every element of claim 1. Claim 1 is amended to recite that *the picture frame-shaped member is attached to the outer edge of a separator and is disposed on both sides thereof*. Applicants submit that Woods fails to disclose a picture frame-shaped member being disposed on both side of a separator, as recited in claim 1. Woods discloses fuel cells in which there is only one separator (21) for each pair of electrodes (22, 23). The problem of expansion or contraction of a space between separators does not arise in such fuel cell stacks disclosed in Woods. Therefore, Woods does not need to disclose the feature of claim 1 that a picture frame-shaped member is disposed on both side of a separator.

Furthermore, Woods employs a sealing technique known as wet sealing in which a porous material is impregnated with a liquid electrolyte. The present invention is a solid polymer type fuel cell and uses a solid membrane as the electrolyte in contrast with the liquid electrolyte used by Woods. Therefore, the wet sealing method disclosed in Woods is not applicable to the present invention.

In light of the aforementioned claim amendments and arguments, Applicants submit that Woods fails to disclose each and every element of claim 1. Applicants therefore request the Examiner withdraw the rejections of claims 1 and 4 under 35 U.S.C. §102(b) and pass the claims to allowance.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance. Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. SIW-031 from which the undersigned is authorized to draw.

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Respectfully submitted,

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